

**IMPLEMENTATION OF GRADUAL IMPEDANCE GRADIENT  
TRANSMISSION LINE FOR OPTIMIZED MATCHING IN FIBER  
OPTIC TRANSMITTER LASER DRIVERS**

**Abstract**

5 A transmitter in a fiber optic system is provided, including a driver  
circuit, a light emitting source, and transmission lines. The driver circuit is  
10 configured to receive a modulated electrical signal and to have a driver circuit  
output impedance. The light emitting source has a light emitter impedance that  
is different than the driver circuit output impedance. The light emitting source is  
configured to receive the modulated electrical signal such that it produces a  
modulated optical signal proportional to modulated electrical signal. The  
15 transmission lines are coupled between the driver circuit and the light emitting  
source for transmitting the modulated electrical signal from the driver circuit to  
the light emitting source. The transmission lines gradually change the  
impedance between the driver circuit and the light emitting source so as to  
gradually match the driver circuit output impedance to the light emitter  
20 impedance.